

## CLAIMS

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1. An enzyme having AHCY-type activity which includes amino acids 177 to 314 of the amino acid sequence of Figure 1, or a functional portion or functional equivalent of said enzyme.
2. An enzyme according to claim 1 which comprises amino acids 183 to 614 of the amino acid sequence of Figure 1.
3. An enzyme according to claim 1 which comprises amino acids 1 to 614 of the amino acid sequence of Figure 1.
4. An isolated DNA sequence comprising a nucleotide sequence selected from the group consisting of:
- (a) a sequence which encodes an enzyme according to claim 1 or a functional portion or equivalent thereof;
  - (b) a sequence which is a complement of a sequence (a);
  - (c) a sequence which is a reverse complement of a sequence (a); and
  - (d) a sequence which is a reverse sequence of a sequence (a).
5. A DNA sequence according to claim 4 in which sequence (a) comprises nucleotides 529 to 945 of the Figure 1 sequence.
6. A DNA sequence according to claim 4 in which sequence (a) comprises nucleotides 549 to 1844 of the Figure 1 sequence.
7. A DNA sequence according to claim 4 in which sequence (a) comprises nucleotides 1 to 1844 of the Figure 1 sequence.
8. A DNA construct comprising a DNA sequence according to ~~any one of claims 4 to 7.~~ *claim 4*
9. A DNA construct comprising, in the 5'-3' direction,:
- (a) a gene promoter sequence;
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- (b) an open reading frame coding for at least a functional portion of an enzyme according to claim 1; and
- (c) a gene termination sequence.

5 10. A DNA construct according to claim 9 wherein the open reading frame is in a sense orientation.

11. A DNA construct according to claim 9 wherein the open reading frame is in an anti-sense orientation.

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12. A DNA construct comprising, in the 5'-3' direction,:

- (a) a gene promoter sequence;
- (b) a non-coding region of a gene coding for an enzyme according to claim 1; and
- (c) a gene termination sequence.

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13. A method for modulating the activity of an enzyme according to claim 1 in a patient, comprising administering to said patient a DNA construct according to any one of claims 8 to 12.

14. A method of amplifying the activity of an enzyme according to claim 1 in a patient comprising administering to said patient a DNA construct according to claim 10.

25 15. A method of suppressing the activity of an enzyme according to claim 1 in a patient comprising administering to said patient a DNA construct according to claim 11 or claim 12.

30 16. A method of determining the modulatory potential of a compound on an enzyme according to claim 1 which comprises the step of determining the ability of said compound to modulate the activity of said enzyme.

17. An antibody which binds an enzyme according to claim 1.

18. An optionally labelled nucleic acid probe capable of hybridising, under high stringency, to a nucleotide sequence of Figure 1.

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